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10/565,965	01/26/2006	Takeshi Iwatsu	27751US6PCT	8439
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.			EXAMINER	
1940 DUKE STREET			SHAH, TUSHAR S	
ALEXANDRIA, VA 22314			ART UNIT	PAPER NUMBER
			2184	
NOTIFICATION DATE	DELIVERY MODE			
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/565,965	IWATSU, TAKESHI	
	Examiner TUSHAR S. SHAH	Art Unit 2184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 April 2008.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/S/65/06)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

1. This action is in response to the amendment filed on 4/10/2008.

Status of Claims

2. Claims 1-20 are presented for examination, of which claims 1, 8, 15 and 16 are in independent form. Claims 1, 8-13 and 15 have been amended. Claims 16-20 are new.

Response to Arguments

3. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d) (1) and MPEP § 608.01(o). Correction of the following is required: As amended line 1 of claim 15 reads, "a computer readable medium including...". The term computer readable medium is not defined in the specification, limiting the term to tangible forms of media. However, the term computer recording medium appears to be sufficiently defined in paragraph 101 of the instant

specification. It is suggested that "computer readable medium" be amended to read "computer recording medium."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravi et al. US Patent No. 6,292,834 B1 (hereinafter Ravi) in view of Frerichs et al. US Publication No. 2002/0120747 A1 (hereinafter Frerichs) further in view of Ka Ming et al. US Patent No. 6,993,283 B1 (hereinafter Ka Ming), used as an evidentiary reference.

Referring to Claim 8, Ravi discloses, a data reproduction method for expanding and reproducing compressed data downloaded through a communication network, comprising:

(a) Making a connection to a server (stream server 220, Ravi Fig. 3) delivering the compressed data (Video/ Audio Streams, Ravi Fig. 3) (Network interface circuit 112 is used to send and receive data over a network, Ravi column 5, lines 18-19);

(b) requesting the server to transfer partial data of a maximum size within such a range that the compressed data does not overflow into a memory (playout buffer 366, Ravi column 6, lines 48-50) means at a time of downloading the compressed data (client module 360 includes playout buffer 366 which stores several seconds worth of data packets from the data stream, Ravi column 6, lines 48-50);

(d) detecting a data size of compressed data temporarily stored in the memory means (the playout buffer stores several seconds of packets of the audio signal and the client computer computes the amount of data it can decompress and render without loss, Ravi column 11, lines 15-18),

(e) controlling to change a threshold value for the data size of the compressed data in accordance with the compression rate detected in the step (d) (the performance variables and computational rate calculated by the client computer 240 are used to alter the bandwidth of the connection with the server, and therefore the amount of data, to prevent buffer overflow or utilize all of the incoming bandwidth more efficiently, Ravi column 11, lines 15-19, 27-29, and 35-38);

(f) checking whether or not unreproduced compressed data in the memory means becomes less than or equal to the threshold value (the client computer 240, determines if the calculated computational rate is higher or lower than the selected bandwidth, Ravi, column 11, lines 19-22);

wherein the steps (c), (d), (e), (f), (g) are repeated until a transfer request of all data is completed (Inherent, when the remaining number of packets is less than the output buffer and the bandwidth adjustments of Ravi do not change that, the audio

stream is at an end and therefore nothing more would be decompressed (reproduced), Ravi column 3, lines 15-19).

It is noted that Ravi does not appear to specifically disclose, (c) starting reproduction compressed data of a prescribed amount is stored;

However, Frerichs discloses, (c) starting reproduction compressed data of a prescribed amount is stored (Once the play buffer is filled to a predetermined level , or low water mark, the internet appliance starts to decompress, decode and output the audio data, Frerichs page 2, paragraph 0020, lines 8-12);

Ravi also does not appear to explicitly disclose, detecting a compression rate of the compressed data downloaded.

However, Frerichs discloses, detecting a compression rate of the compressed data downloaded (Frerichs teaches using his invention with streaming MP3s, which are well known in the art as a compressed audio format where the compression rate is encoded in the file itself and maybe retrieved. As evidence, see Ka Ming, column 2, lines 28-33 and 42-44).

Ravi additionally does not appear to disclose, (g) temporarily stopping reproduction when the compressed data is determined as being less than or equal to the threshold value in the checking until the compressed data is determined as being greater than the threshold value (when the play buffer 6 is not filled over the low watermark, outputting will not commence as the low watermark threshold is what triggers the outputting process, Frerichs page 2, paragraph 0020, lines 15-18) (It is seen as inherent to Frerichs that if the play buffer 6 were to dip back below the low watermark

threshold, outputting would have to be interrupted until the buffer was refilled past the low watermark).

Ravi and Frerichs are analogous art because they are from the same field of endeavor, namely they both deal with the decompression and output of streaming audio data.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Ravi and Frerichs before him or her, to modify the operation of Ravi's playout buffer 366 to include the use of the low watermark disclosed in Frerichs as a threshold to begin decompression and outputting.

The suggestion/motivation for doing so is apparent in Frerichs, specifically page 2, paragraph 0020, lines 24-25, where it states that this method ideally allows for an uninterrupted stream of audio to the audio device.

Therefore, it would have been obvious to combine, Ravi and Frerichs, to obtain the invention as specified in the instant claim.

As per claim 9, Ravi discloses, the data reproduction method according to claim 8, wherein, in the controlling, control is performed to change the threshold value larger when the compression rate of the compressed data temporarily stored in the memory means gets lower), and change the threshold value smaller when the compression rate gets higher (client computer 240 utilizes performance variables from the incoming data stream and the system to calculate the computational rate of the system and bandwidth of the network connection. In combination with Frerichs as described in claim 8, that

performance information would include the compression ratio which is encoded into the MP3 file. Therefore the system would inherently take into account the compression ratio as that directly impacts the ability of the client to decompress and render the incoming packets, Ravi column 11, lines 15-25).

As per claim 10, none of Ravi, Frerichs specifically disclose, the data reproduction method according to claim 9, wherein in the detecting, the compression rate of the compressed data is detected based on data contained in a header or a footer of a file of the compressed data downloaded.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the methods of Ravi and Frerichs to include this information specifically in a header or footer of the transmission.

The suggestion/motivation for doing so is apparent in that, it is a widely known method in the art to prepend or append information about the format or other details, such as a compression ratio, to a transmission or frame in a transmission.

Therefore, it would have been obvious to combine, Ravi and Frerichs, to obtain the invention as specified in the instant claim.

As per claim 11, Ravi discloses, the data reproduction method according to claim 9, wherein in the detecting, the compression rate of the compressed data is detected based on bit rate data of the compressed data downloaded (the system of

Ravi compares the incoming bit rate to the average client computational rate in order to adjust the bandwidth of the connection, Ravi column 11, lines 15-25).

As per claim 12, Ravi discloses, the data reproduction method according to claim 8, wherein in the controlling, control is performed to change a first threshold value for determining timing to read out the compressed data from the memory means and a second threshold value for determining timing to interrupt downloading of the compressed data into the memory means (for both increments and decrements of the bandwidth, threshold values are designated and when the number of packets falls outside of those thresholds, the bandwidth is adjusted and therefore the timing of the packets entering into the buffer, Ravi column 3, lines 15-25).

As per claim 13, Ravi discloses, the data reproduction method according to claim 8, wherein in the controlling, control is performed to change the threshold value in accordance with transmission capability of the communication network (the bandwidth is adjusted based on the client computers ability to receive and process packets of data, Ravi column 11, lines 15-19, 27-29, and 35-38).

As per claim 14, it is noted that Ravi does not disclose, the data reproduction method according to claim 8, wherein the compressed data is MP3 (MPEG Audio Layer 3) data.

On the other hand, Frerichs discloses the claimed feature, the data reproduction method according to claim 8, wherein the compressed data is MP3 (MPEG Audio Layer 3) data (streaming MP3 may be used. Frerichs page 2 paragraph 0017, line 17).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the method of Ravi to use MP3s as the audio stream.

The motivation to combine is apparent in that Ravi is directed to multimedia streams transmitted over a network and MP3 audio files are well known in the art to be used in this manner.

Therefore, it would have been obvious to combine, Ravi and Frerichs, to obtain the invention as specified in the instant claim.

Referring to claim 1, Ravi discloses, a data reproduction device for expanding and reproducing compressed data downloaded through a communication network, comprising:

Memory means for temporarily storing the compressed data downloaded (playout buffer 366, Ravi column 6, lines 48-50);

Control means for changing a threshold value for the data size of the compressed data in accordance with the compression rate detected by the detecting means (the performance variables and computational rate calculated by the client computer 240 are used to alter the bandwidth of the connection with the server, and therefore the amount of data, to prevent buffer overflow or utilize all of the incoming bandwidth more efficiently, Ravi column 11, lines 15-19, 27-29, and 35-38); and

Ravi does not appear to explicitly disclose, Data expanding means for expanding the compressed data stored in the memory means.

However, Frerichs discloses, data expanding means for expanding the compressed data stored in the memory means (Once the play buffer is filled to a predetermined level , or low water mark, the internet appliance starts to decompress, decode and output the audio data, Frerichs page 2, paragraph 0020, lines 8-12);

Ravi also does not appear to disclose, reproducing means for performing streaming reproduction on data expanded by the data expanding means.

However, Frerichs discloses, reproducing means for performing streaming reproduction on data expanded by the data expanding means (Once the play buffer is filled to a predetermined level , or low water mark, the internet appliance starts to decompress, decode and output the audio data, Frerichs page 2, paragraph 0020, lines 8-12);

Ravi additionally does not disclose, detecting means for detecting a data size of the compressed data temporarily stored in the memory means and a compression rate of the compressed data downloaded.

However, Frerichs discloses, detecting means for detecting a data size of the compressed data temporarily stored in the memory means and a compression rate of the compressed data downloaded (Frerichs teaches using his invention with streaming MP3s, which are well known in the art as a compressed audio format where the

compression rate is encoded in the file itself and maybe retrieved. As evidence, see Ka Ming, column 2, lines 28-33 and 42-44).

Ravi further does not disclose, reading the compressed data from the memory means when the data size of the compressed data temporarily stored in the memory means reaches a prescribed threshold or more and transferring the compressed data to the data expanding means (Once the play buffer is filled to a predetermined level, or low water mark, the internet appliance starts to decompress, decode and output the audio data, Frerichs page 2, paragraph 0020, lines 8-12).

Ravi furthermore does not appear to explicitly disclose, said control means temporarily stopping reproduction when the compressed data is determined as being less than or equal to the threshold value until the compressed data is determined as being greater than the threshold value.

However, Frerichs discloses, said control means temporarily stopping reproduction when the compressed data is determined as being less than or equal to the threshold value until the compressed data is determined as being greater than the threshold value (when the play buffer 6 is not filled over the low watermark, outputting will not commence as the low watermark threshold is what triggers the outputting process, Frerichs page 2, paragraph 0020, lines 15-18) (It is seen as inherent to Frerichs that if the play buffer 6 were to dip back below the low watermark threshold, outputting would have to be interrupted until the buffer was refilled past the low watermark).

Ravi and Frerichs are analogous art because they are from the same field of endeavor, namely they both deal with the decompression and output of streaming audio data.

At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Ravi and Frerichs before him or her, to modify the operation of Ravi's playout buffer 366 to include the use of the low watermark disclosed in Frerichs as a threshold to begin decompression and outputting.

The suggestion/motivation for doing so is apparent in Frerichs, specifically page 2, paragraph 0020, lines 24-25, where it states that this method ideally allows for an uninterrupted stream of audio to the audio device.

Therefore, it would have been obvious to combine, Ravi and Frerichs, to obtain the invention as specified in the instant claim.

As per claims 2-7, similar limitations are recited as in claims 9-14, respectively. Therefore the rejections of claims 9-14 apply to claims 2-7, respectively.

Referring to claim 15, similar limitations as in claim 8 are recited. Therefore the rejection of claim 8 applies to claim 15.

Referring to claim 16, similar limitations as in claim 1 are recited. Therefore the rejection of claim 1 applies to claim 16.

As per claims 17-20, similar limitations as in claims 9-12 are recited. Therefore the rejections of claims 9-12 apply to claims 17-20, respectively.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUSHAR S. SHAH whose telephone number is (571)270-1970. The examiner can normally be reached on Mon-Fri 7:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on 571-272-4176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Niketa I. Patel/
Primary Examiner, Art Unit 2181

T.S.